

THE  
PSYCHOLOGICAL BULLETIN

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## GENERAL REVIEWS AND SUMMARIES

## CHILDHOOD

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As a moderately complete bibliography of child study for the years 1911-1912 contains approximately some three thousand titles, the only thing possible in a general summary is to select from this superabundance of material a few of the more representative books and articles, which will serve to illustrate the more important topics, and to indicate the general directions in which the subject has developed during the last two years.

*Congresses.*—In the Kongress für experimentelle Psychologie (46, 70), held in Berlin in April, 1912, applied psychology, for the first time, held a prominent place in the program, especially along the line of child psychology and its educational applications. At the Erster deutscher Kongress für Jugendbildung und Jugendkunde (7), the chief topics of discussion were vocational schools and the problem of intelligence in relation to school work. Papers on the various aspects of the latter problem were given by Stern, Meumann, Kramer, Deuchler, Petzoldt and Rasopke. These are printed in full by the "Bund für Schulreform" (14). A brief report of the second Russian Congress for Pedagogical Psychology, which was held in 1909, is furnished by Steinhaus (89). The program included the following subjects: psychological foundations of education, psychological foundations of instruction, psychology and pedagogy as subjects of instruction in the middle and high schools, art in the life of the child, psychology in its relation to school, hygiene, and children's literature. At the annual meeting of the British Association for the Advancement

of Science, held in Sheffield (83), the sections of anthropology and education devoted a joint meeting to the subject of mental tests,—in which MacDougall, Spearman, Burt, Otto Gross and Wiersma took part. In both 1911 and 1912, at the annual meeting of the American Psychological Association, an entire session was given to the discussion of mental tests, and in 1912 the program was continued through a second session, and a joint session with the Educational Section of the American Association for the Advancement of Science with the Educational Section was devoted to educational psychology. There were in all seven papers dealing with the character and results of different methods of testing the mental abilities of children and adults. In August, 1911, the first international conference for the study of childhood was held in Brussels (73). The Conference was divided into five sections: (1) General Child Study and Nomenclature, (2) Anthropometry and School Hygiene, (3) Child Psychology (normal and abnormal), (4) Pedagogy of Normal and Abnormal Children, and (5) Sociology of Childhood. Hungary (97) has already held her first congress for child study, and two congresses for experimental pedagogy (55) have taken place in Russia.

*Instituts*.—The advance along scientific lines is further shown by the various so-called *Instituts* for child study, which are usually university departments. As a general report of scientific child study, the work of Lipman and Stern (14) is one which deserves the gratitude of all students of the subject. Through a system of international coöperation, the authors have collected and systematized in compact and convenient form, information in regard to child study periodicals, associations, *Instituts*, congresses, psychological clinics, and university courses throughout the civilized world. Since progress in this line is now so rapid, it is to be hoped that the good work will be continued and revised at frequent intervals. Several of the newer foundations are of sufficient importance to deserve special mention.

In a contribution to the *Zsch. für päd. Psychologie* Professor Meumann (59) gives a brief sketch of the purpose and proposed methods of the psychological *Institut*, recently established at Hamburg, and a further account is furnished by Hasserodt (34). The need of a center where the diversified and widely scattered contributions to child study, especially in its educational applications, may be brought together has long been felt, and this Professor Meumann hopes to realize as well as the even more fundamental purpose of research. No instruction is given by the *Institut*, the entire time of its members being devoted to research and coöperative work. Four

groups of methods will be applied: psychological experiment, collections of children's work, direct observation, and statistics.

Of special interest are two brief reports by Kretzschmar (48, 49) in regard to child study in the *Institut für Kultur- und Universalgeschichte*, opened in 1909, at the University of Leipzig through the efforts of Professor Lamprecht. Here a special department of genetic child psychology has been established in the interest of anthropology and culture history, and the work of the seminaries is jointly carried on by historians, ethnologists and psychologists. The *Institut* possesses a remarkable collection of children's drawings, numbering between 115,000 and 120,000, representing different nations. Among the subjects which have already been taken up by the seminary in comparative research are "Introduction to the fundamental questions and methods of comparative psychology"; "Stages of development of ability and graphic portrayal in children;" "The development of space ideas;" "The influence of the culture *milieu* as exemplified in East Indian and Japanese drawings;" "Mental development in the children of primitive peoples;" "A comparison between graphic and speech development of the child." That a department of comparative child psychology should be established as a part of the first German *Institut* for culture history is in itself a significant fact in the history of child study.

The *Institut* J.-J. Rousseau (9) opened in October, 1912, at Geneva, although primarily for the training of teachers, is unique in having as its basic principle the study of the child. The establishment of the Children's Bureau at Washington as a governmental department marks an important step in the conservation of childhood. Its first work, as announced by its head, Miss Julia Lathrop (16, 52), is the collection of statistics of infant mortality in the United States.

*General Treatises.*—Among the books dealing with the general psychology of childhood, Stern's *Differentielle Psychologie* (90), is the most important contribution, although it does not deal exclusively with childhood. Sellman's book (82), while making little contribution in the way of new knowledge, summarizes child psychology up to date. Ament's well-known *Seele des Kindes* (3) has been revised and now appears in its third edition. Heller (36) publishes a course of four lectures given before the Committee for the Promotion of Juvenile Protection in Vienna. The first two sketch in outline the psychological development of the normal child, the third discusses the problems of infantilism and feeble-mindedness and the last, which is of special value, deals with hysteria and its complications.

Unger (99) has given an appreciative presentation of Ludwig Strümpell's aims and methods of work in child psychology, with especial reference to its significance for pedagogy. A fourth edition of Claparède's *Psychologie de l'enfant* has appeared, with additions chiefly along the line of experimental pedagogy. About one third of the book is devoted to the discussion of intellectual fatigue. An English translation of this (17) has appeared. A third edition of Groos's *Das Seelenleben des Kindes* (33) has been published, as also a second edition of Gaupp's admirable little book (29). The latter deserves translation into English. Its clearness, brevity and scientific character would make it an excellent text-book for normal schools, for although the first part of the book deals with infancy, by far the larger portion is devoted to the school child. In infant psychology there is a study of unusual value by Dr. Peterson (71), psychologist to the Lying-in Hospital of the City of New York, who observed and tested 1,060 individual babies, among whom were 41 premature children and 25 pairs of twins. Sight, hearing, taste, smell, cutaneous sensibility and power of grasping were tested. Thirst, hunger, organic sensations, and the beginnings of memory, feeling and consciousness were also noted. The summary of conclusions given by the author is regarded as only preliminary. Kirkpatrick's *The Individual in the Making* (45) is a subjective view of child-development, containing many suggestions to parents and teachers. Here, too, should be mentioned the two recent bibliographies of child study (37, 100) compiled at Clark University and the short but carefully selected list compiled by H. C. Warren (102) for the *Zeitschrift für Psychologie*.

*Studies of Individual Children.*—The second volume of the record kept by Mr. and Mrs. Scupin (81) which covers a period, the fourth to the fifth year, where the dearth of records is even greater than for the earlier years, is of especial value. Another contribution is Martha Silber's (84) *Fragen, Reden und Denken eines Kindes*, as recorded in a daybook kept from the third to the ninth year. Of quite a different order, but interesting as giving a glimpse of the life of a Japanese child, is the autobiography of Yoshio Markino (56) and the record of the fanciful imaginings of a child of three recorded by Nancy Price (74). There is also a recent translation of Otto Ernst's *Roswitha* (25), which is an excellent version of a book whose charm and scientific sympathy will be recalled by all who have read the original delineation of the little daughter of the author.

*Mental Tests.*—In the literature of child study for the past two



years, the most prominent topic is undoubtedly mental tests. In this field, Stern (91) has done the great service of summarizing a vast amount of literature which will soon be made available to English readers by Whipple's translation now in press. But Stern's work is much more than a mere summary of mental tests, for the author has not only made a digest of the most important literature but has added many criticisms and constructive suggestions for future work. The paper has two chief divisions, the first of which is devoted to single tests and series of tests, particularly those which have been used by psychiatrists; the second and larger division takes up the Binet tests, and reviews the most important literature on the subject, making through this a comparative study of the merits and defects of the system, as shown by the results obtained in different countries and with different languages, by those who have actually used the tests. The work of Bobertag and Chotzen in Germany, Mlle. Descoeudres in Switzerland, Miss Johnson in England, Goddard, and Terman and Childs in the United States, furnish material for comparison, which is valuable, not only as regards agreements in the results, but equally instructive through the variations and disagreements. Most experimenters agree in finding that while collectively for large numbers of children the Binet scale is fairly trustworthy, this does not hold true of the tests for the separate years. In general, the tests for the early years are too easy, and the later tests too difficult. Stern's attitude is, on the whole, an optimistic one, for although in its final revision the individual tests of the Binet-Simon scale may be completely changed, he believes that the fundamental principle of tests for mental age is correct and the revision of the scale should, in Stern's view, be a matter for international coöperation. Each single test should be tested on large numbers of children and should not only be performed by 75 per cent. of the children of the given age, but should show a sharp gradation between the ages immediately above and below, *i. e.*, should be performed by practically all the children a year older and less than half of those a year younger. In grouping the tests for any given year, after a sufficient number of single tests have been satisfactorily worked out, care must be taken to test as many mental functions as possible, and in the further arrangement in series the same principle must be kept in view. Parallel series should be arranged so that when, for any reason, a test is invalidated, another series may be given. The scale should be extended to cover the years up to fifteen, for at present no child over ten can be fairly tested because of the lack of supplementary

tests in the succeeding years. Physiological as well as chronological age should be taken into account in estimating mental age, and both social class and school attainments have been shown to have influence on mental development. A final section of the paper deals with the estimation and testing, with the aid of the correlation method, the finer degrees of intelligence to which the Binet-Simon tests are not applicable. A carefully selected bibliography of 82 titles is appended.

As supplementing Huey's (42) summary of the Binet-Simon tests, it is necessary in this connection to note only a few of the more recent publications.<sup>1</sup> Kuhlmann (51) has used the tests on 1,300 feeble-minded and epileptic children at the State Institution at Faribault, Minn., and, though finding deficiencies and realizing the need of a standardization of the tests, concludes that with all its defects, the accuracy of the Binet-Simon scale is nevertheless greater than that of any other method except prolonged, careful observation by a skilled observer of the individual child. From so careful a worker as Dr. Kuhlmann, this opinion cannot fail to have weight. A previous article by the same writer (50) and a recent discussion and criticism by Clara Schmitt (80) should also be mentioned. Dr. Goddard has continued his work of testing normal children, and has re-tested many cases. As yet only the preliminary report of this, given to the American Psychological Association (62), is available.

Although the Binet-Simon tests occupy by far the most prominent position in the literature of mental tests, several other series and individual tests represent recent work in this field. Miss Squire (96) publishes a series of graded mental tests which were worked out on eighty children in the Chicago School of Education, so that chronological, physiological and psychological ages should be correlated as nearly as possible. A functional basis underlies these tests. Abelson (1), in England, has also devised an interesting series of tests which have been published in the *British Journal of Psychology*. The Healy and Fernald (35) tests, now published in monograph form, are the result of practical work with the children of the Chicago juvenile court, and are very comprehensive in scope. Meumann (57), whose opinion of the Binet-Simon tests is not so favorable as that of the majority of those who have worked with them, has devised a test which, although his main aim was to establish qualitative differences, proved to be quantitatively usable. Pairs of words were so chosen that different relations between them were possible, although only a logical connection made good sense. The tests

<sup>1</sup> See also FREEMAN, this BULLETIN for July, 1913.

were first tried on selected pupils by Meumann himself, and then given to five hundred pupils of the Bürgerschule by Schröbler. Eight different forms of solving the connection appeared, and these corresponded to types of intelligence. Numerous examples, some of which are extremely interesting, are given to illustrate these types. A Japanese experimenter, Dr. Matsumoto (57), made use of a motor test which he considers correlated with mental development. The test consists in picking up beans with both hands, as many beans as possible in thirty seconds. Right and left hands are tested separately. Subjects from 3 to 90 years of age were tested, and a regular increase of motor ability, which reached its highest point between fifteen and nineteen years, was observed. After this age there was a gradual decline. From these results Dr. Matsumoto arrives at a periodical division of life, which contains six instead of the seven classic ages described by Shakespeare.

*Feeble-mindedness.*—As a study in the heredity of feeble-mindedness, Goddard's *Kallikak Family* (31) is a work of unusual interest, for beginning with a feeble-minded girl in the Vineland institution, he has traced the family for eight generations back. At this point he finds a division of the family into two branches, an abnormal branch starting with the illegitimate child of a feeble-minded girl. The father of the child later married and founded a normal branch of the family, whose members are all of sound mind, and among them are to be reckoned many of brilliant attainments in social and professional life. Of the five hundred and eighty descendants of the feeble-minded girl whose records have been traced, one hundred and fifty-three have been shown to be definitely feeble-minded and only fifty-six are known to have been normal. None have risen above mediocrity. The contrast is the more striking because the two branches of the family have remained in the same state and the broader social environment has been practically the same. Two other studies in heredity (20, 26), made under the auspices of the Eugenics Record Office at Cold Spring Harbor, bring out the heredity character of mental degeneracy, and are valuable studies, though lacking the special interest given to the Kallikak family by the existence of the normal branch of the family for comparison. Such studies as these will do more than anything else to enlighten the public in regard to the social danger of leaving the mental defective unprovided for and at large in the community.

Holmes's *Conservation of the Child* (40) is the most complete presentation of the psychological clinic and its social significance which

has yet appeared in print. While based on data derived from the psychological clinic which was established in the department of psychology at the University of Pennsylvania sixteen years ago, to the author's own experience have been added the conclusions of other workers in the same field. Several systems of mental tests are given and although the book is primarily intended as a guide in clinical psychology, it includes discussions of some of the broader social and educational aspects of mental defectiveness, so that it is of interest to teachers and all those interested in child welfare. The Clinical Classification of Delinquent Children, according to causative pathology, issued as a part of the annual report of the Seattle Juvenile Court (4), and the first annual report of the Gatzert Foundation of the University of Washington (88), likewise furnish items of value for those interested in clinical psychology. Baldwin (6) also contributes to our knowledge of psychological clinics, showing the character of the work done at Vineland and other clinics, and the problems which are presented by mental defectives. Dr. Huey's little volume (41) is a series of clinical studies in the psychology of defectives, made at the State Institution at Lincoln, Ill. Thirty-five border-line cases were studied with Binet tests and others. The careful clinical records of these cases furnish an excellent model for further work in the same line.

*Precocity.*—Several studies of precocious children have appeared during the last two years. Miss Dolbear (21), in her study, has selected for comparison groups of children of unusual intellectual development, making use of both present-day prodigies and those of earlier date whose lives are now completed. While no dogmatic conclusions are drawn, it is pointed out that in some of these children there appears a serious danger of one-sided and partial development; that both heredity and training seem to have been important factors, and that precocity is by no means always associated with genius, but that, on the contrary, the reverse has often proved true. Addington Bruce (12) has drawn from German sources the almost forgotten case of Karl Witte, whose development offers some points of especial interest. Williams (103) gives a comparison between John Stuart Mill and the son of Dr. Boris Sidis, whose precocious mathematical ability has attracted attention at Harvard. From the psychological laboratory of the University of Rome (19) comes a study of 41 exceptionally intelligent children, selected from 1,488, attending the kindergartens and public schools of Rome, and ranging in age from three to twelve years. As tests of intelligence, the Binet-



Simon scale, Ebbinghaus's combination and memory tests and Bourdin's test for attention were used. General conclusions drawn from this study are, that there is a correlation between physical environment and development of intelligence, and also between physical and mental development. Both mechanical and associative memory were good in all these children. From Japan we have a study by Professor Sakaki (79), of the Imperial University of Tokyo, of so-called abnormally intelligent pupils, in which he classifies these children into six groups, in only one of which he finds the children to be perfectly free from pathological taint, and of stable superiority throughout life. True geniuses are found only in this class, the early development and precocity of the other classes tending either to early decay or one-sided development. Stern's contribution on the "Supernormal Child" (92) is rather a plea for educational provision for gifted children than a study of their development, but is based both upon such study and knowledge of the injustice which they suffer under our current educational systems. Although cast in the form of a novel, Mary Antin's *Promised Land* (5) furnishes us an unusually vivid autobiography of a gifted child and her development, which has a positive psychological value which entitles it to mention.

*The Montessori System.*—On the distinctively educational side of child study, the Montessori system has, during the past year, held the most prominent place and probably no system has ever suffered more from exploitation than this. But of the flood of literature which has appeared on the subject, only a small proportion is based on any real study of the system or actual observation of the schools. Dr. Montessori's own books are here the chief source of information. While the *Montessori Method of Scientific Pedagogy* (64) contains the chief exposition of the system, the *Anthropological Pedagogy* (63) supplies a background which greatly aids the understanding of the system in its broader aspects. Mrs. Fisher's book (27) is a delightfully written account of an American mother's application of the Montessori principles in her own home. The *Montessori System in Theory and Practice* (86) is a brief statement of the principles of the system, its possible application to American education, its similarities and dissimilarities to the kindergarten. A final chapter, by Miss Kennedy, of Providence, gives the actual experience of an American teacher. The United States Bureau of Education has issued a bulletin on the Montessori System (85), and there is also an exposition and criticism by S. A. Morgan (65),

of Toronto. Here, too, should be mentioned Holmes's introduction to Miss George's translation of the Montessori method, and Gesell's (30) criticism in a supplementary chapter of his *Normal Child and Primary Education*. Among the many contributions to periodical literature are to be noted the paper by Warren (101); and the excellent articles of Ellen Yale Stevens (94, 95), comparing the kindergarten and the Montessori system, a comparison based on actual observation of the Montessori school and kindergarten in Rome as well as on the knowledge of American kindergartens. *A Guide to the Montessori System* (93) by the latter author is an appreciative and helpful presentation of the principles, derived not only from the study of Dr. Montessori's books but from personal contact with the schools and their founder in Rome.

During the years 1911-1912, a number of studies dealing with the child of school age have appeared. Among these must be mentioned Pohlmann's book (72) which is an investigation of the developmental progress in the understanding of the content of the words used by school children, *i. e.*, the relation between the child's speaking vocabulary and the logical meanings connected with it. He finds that children have not always even an approximate understanding of what they verbally express, though the understanding of words used in sentences is nearer their logical content than when such words are isolated. Often words used by children are mere combinations of sounds without meaning and context. The subjects of research were children of the elementary schools, from 5 to 14 years old, and ten groups of words were used to test their knowledge, namely, words indicating (1) concrete sense objects, (2) various sense qualities (except taste), (3) taste-qualities, (4) tools and instruments, (5) materials, (6) nature study concepts, (7) names of relations, (8) social and social-ethical ideas, (9) religious ideas, (10) complex concepts, *e. g.*, curly hair, edible fruits, electric bell, etc. Nearly one third of the book is devoted to the actual definitions given by the children, and the analysis of these furnishes many interesting points in the psychology, not only of speech development but of the thought activity of the child. W. H. Winch (104) has made, in the London elementary schools, a somewhat extensive inquiry into the relation between the age of entering school and school progress, and finds that from the entrance age of three to five, early entrance is no intellectual advantage to the child, either in his infant school work or as regards his later school progress. There seems some reason for supposing that the children entering after five may show some re-

tardation in school progress. As England has no system of public kindergartens, the question of school attendance for children three to five years of age, which to Americans scarcely seems a problem, is a very real one and involves serious considerations. Gesell's book (30) is the joint work of two authors, who have had both practical experience and training in genetic psychology. A brief historical introduction serves to sketch the influences which have led to the conception of the child as a problem to be scientifically studied. Part II. is an outline of the genetic background upon which child study is based. Part III., the pedagogical section, is the core of the book, and discusses in a practical, helpful way the problems of the primary school which occur in the daily program of school work. While dogmatic assertions are conspicuously absent, principles underlying successful teaching of the subjects of the elementary school curriculum are clearly and helpfully given. Part IV. deals with the conservation of child life. Another book dealing with the application of child psychology to school problems is that of Rusk (78). This is based on Meumann's *Vorlesungen zur Einführung in die experimentelle Pädagogik*, and makes accessible in English the gist of Meumann's two volumes. Use has also been made of the results of English investigations and much which has been made available since the publications of Meumann's work has been incorporated.

*Sleep.*—Osborne (69) has made an extensive investigation of the relation of sleep to weather conditions, food and nutrition, brain development and the emotional life. The paramount importance of the character and amount of sleep to brain development and the rhythmic character of sleep as related to nutrition are specially emphasized. The Study by Andress (2) is of a different character and is based on a record of the sleep habit of 49 normal school students, 26 juniors and 23 seniors, who furnished a total of 1,301 records in response to a questionnaire provided by the author. Results showed an average of over  $8\frac{1}{2}$  hours sleep. Dreams were remembered for 44 per cent. of the number of nights' sleep recorded, and 28 per cent. of these dreams were recognized as being reflections of the school work of the previous day, a fact of interest in connection with the Freudian theory of dreams. A third contribution is the study by Terman and Hocking (98) on the sleep of school children. The first section deals with the distribution of sleep according to age, first summarizing the estimates of the need of sleep as given by the various authors who have studied the subject and then carrying out an independent investigation on 2,692 children, between the ages of

6 and 20 years. One of the most striking facts of this investigation is the excess of sleep among these American children as compared with the German children studied by Bernhard, and the English children studied by Ravenhill, which amounts, for most ages, to between an hour and an hour and a half. Better home conditions and more outdoor life are probably important factors in this respect. The second section describes the relation of sleep to intelligence, school success and nervous traits. There was practically no correlation, either positive or negative, between amount of sleep and mental achievements. This was true for every school subject and for every age. Various tentative explanations of this unexpected result are offered. The third section of the paper is a study of the conditions of children's sleep, which includes housing conditions, ventilation, hours of going to bed, and miscellaneous external conditions. Internal conditions, such as improper diet, obstructed breathing, eye strain, nervousness and conditions resulting in night terrors and bad dreams, are also considered, and there is an appendix on the sleep of feeble-minded children. A bibliography of 40 titles completes the study.

*Memory and Association.*—Several studies on memory and association have appeared during the last two years, of which Meumann's *Ökonomie und Technik des Gedächtnisses*, translated into English by Professor Baird, is the most important. Hentschel (37) has made a study of immediate retention. The subjects were 31 children, 8-14 years old, in the special classes and 24 normal pupils in the third to the eighth school years, and material used was series of consonants. His conclusions may be summarized as follows: (1) With a low degree of intelligence, there is also, as a rule, a low capacity for immediate retention. (2) This phenomenon is so certain and evident that testing of the memory span should form an integral part of mental tests. (3) Retention of five consonants in a series must be regarded as a normal capability. (4) Pedagogy must take into account the individual differences in memory span and should formulate aims and methods according to them. Another experimental study has been made by Lobsien (53), on the development of the acoustic word memory in school children, 1,281 boys and 1,557 girls, of ages from 7 to 15 years. Lay's material of two-syllabled senseless words was used. Great variation was found in the course of the successive school years; although there is in general a rise of the errors for the succeeding years. The tenth and eleventh years show a plateau in the curve and the errors are greatest here. In general, no sex differences



appear, although in individual cases there are interesting variations. Dr. Goett (32), of the K. Universitäts-Kinderklinik at Munich, publishes the results of an investigation of 52 children, by the method of *Tatbestandsdiagnostik*, used by Jung and his followers. The Rosanoff (76) research of association in children is a careful study of 300 children, ranging in age from four to sixteen, by the Kent-Rosanoff technique. A study of association in feeble-minded and delinquent children by Eastman and Rosanoff (24) leads the authors to the conclusion that "States of arrested mental development present certain fairly characteristic associational tendencies. These tendencies are characterized mainly by failure of reaction, non-specific reactions, and certain types of individual reactions." The association test as thus used is an aid in the diagnosis of feeble-mindedness. A monograph by Braunschhausen (10) presents results of memory tests in the Luxemburg gymnasium. It is prefaced by a chapter on methods of investigating memory, and the conclusions are mainly of a pedagogical nature, as the work is intended especially for teachers.

*Æsthetic Development.*—Meumann (58) has sketched a program for the psychological investigation of children's drawing, in which he discusses the different problems involved in a thorough psychological procedure. Three chief psychological processes, each of which includes many partial ones, are involved in drawing, and need investigation on the basis of a scientific pedagogy of drawing. These are the activity of the eye, or, more correctly, sight in general; the activity of the hand and arm, or the motor processes involved in drawing; the apperception processes involved in the comprehension of the object to be drawn; the coördination of these different processes. In the latter are to be distinguished (a) the coördination of eye and hand in drawing, *i. e.*, the coördination of optic-sensory and motor processes, (b) the coördination of sight ideas and the hand, (c) the coördination of these processes with the apperceptive factors. Each of these processes is discussed in detail by the author, and a large number of problems for investigation are thereby suggested. W. Jones (44), of the *Psychologischen Institut des Leipziger Lehrvereins*, has contributed a careful experimental study on the development of the color sense in children, the particular point of investigation being the threshold for color saturation for children between the ages of 4 and 14 years. Two boys and two girls of each age, and four adults for comparison, served as subjects of the experiments. Interesting and elaborate conclusions are drawn, but further experiment along these same lines on

larger numbers of children seems desirable. Böhm (8), of Jena, has also investigated the color knowledge of children entering school, but the tests given were in regard to color names rather than actual ability in color discrimination. He found that most of the children entering school were able to name the simple colors, and to a limited extent, some of the mixed colors. Twenty children in the first year of the practice school were tested. Rouma's monograph (77) is the most comprehensive which has appeared since the work of Levinstein and Kerschensteiner. It, however, adds little that is new to their conclusions, and its permanent value is chiefly in the extensive reproductions of children's drawings which are thus made available for further comparative study. Luquet (54) sketches the development in graphic ability and analyzes this from a philosophical point of view. As 1,687 drawings are reproduced, we have again a valuable contribution for comparative study. Kretschmar (47) discusses the scientific results already obtained from the study of children's drawings, and points out the possibilities which they offer for future investigations in psychology and pedagogy; and Müller (67) publishes a monograph on the æsthetic judgments of children.

*Sex.*—*Aus dem Seelenleben des Kindes* (43), by Hug-Hellmuth, is a summary of the Freudian contributions to child study. The findings in a few cases of extremely neurotic and abnormal children are used as the basis of a theory which the author then attempts to apply to the normal children studied by Preyer, Stern, Sully, Scupin, Miss Shinn and others. To anyone who has closely studied the normal development of children, the most striking feature of the book is the perversion of normal facts to fit an abnormal theory, and, as a consequence of this, the germ of truth which it contains is almost completely obscured and made to assume a repulsive aspect. Moll's study (61), recently translated into English, though written from a physician's point of view, and dealing extensively with pathological manifestations in children, finds no corroboration of the Freudian hypothesis, even in pathological cases. Though the character of the work is such that its greatest value is for physicians, and those dealing with juvenile delinquents, the final chapter on sex education is of interest and value to all parents and educators, as it deals with the subject from a normal and ethical point of view.

*Social Studies.*—*The Delinquent Child and the Home* (11) is the record of a research made under the auspices of the Russell Sage Foundation and is an important and valuable contribution to the study of juvenile delinquency. More than 14,000 cases of delinquent

children, brought before the Cork County Juvenile Court, were analyzed, 2,770 girls, and 11,413 boys. Study was made of environment as well as the individual, and the results furnish a basis for the strongest possible plea to the community to aid in removing conditions that annually bring thousands of children before the juvenile court. Clopper (18) also presents a study of the child from a sociological aspect. As Secretary of the Child Labor Committee for the Mississippi Valley, he discusses the form of child labor which has thus far received too little attention from legislators. The conditions, and mental, moral, and physical effects of the street trades are depicted in a condensed but vigorous way, and the facts recorded carry conviction with them.

*Interest and Attention.*—Nagy (68) presents the results of his observations on a niece and nephew respectively  $5\frac{1}{2}$  and  $6\frac{1}{2}$  years old, which continued for five years, and after a break of two years, for two years more. These children were taken yearly to a blacksmith's shop, a threshing floor, a nut-gathering and grain-harvesting, and their successive development of interest in the various objects and activities connected with these observations was noted. These records were supplemented by continuous observation of ten boys and ten girls, of ages from 5 to 15, in a summer *Ferienkolonie*, with whom the author made bi-weekly excursions. From this somewhat limited material he finds five stages of interest which he characterizes as follows: (1) sense interests, 1-2 years, (2) subjective interests, 2-7 years, (3) objective interests, 7-10 years, (4) permanent interests, 10-15 years, and (5) a stage of logical interest from 15 years onward. These stages are discussed with considerable detail, especially the third and fourth, in relation to the feelings, memory and logical connections, and pedagogical applications. Numerous illustrations of the various stages are given, but it is certainly desirable that larger numbers of children, in more varied environments, should be studied before general conclusions are shown.

Hoffmann's article (39) is a critique of previous studies on this subject, made by Lobsien, Stern, Walsemann and Wiederkehr, and disputes the validity of results obtained by the question method of determining interest. Three short contributions by Dück (22, 23) deal respectively with the historic, geographical and æsthetic interests of school children. Here, too, should be mentioned two studies of children's ideals, one of American school children, by Hill (38), and one of German children by Richter (75). A study of attention comes from Motora (66), of Japan, who experimented on the effect of practice on

the attention. These experiments were carried on with groups of children and students, laboratory devices for measuring attention in the fields of both sight and hearing being used. Professor Motora reaches the conclusion that for children where mental endowment is not of a high order, there is a beneficial effect through practice, but that other children make no essential progress in periods of the length considered.

*Miscellaneous.*—Worthy of note are also the following unclassified contributions.

Buchner (13) contributes to a field where little material exists. He presents systematically and in chronological order the observation of the parents on the emotional manifestations of the first year of life. These early rudimentary expressions of the awakening of emotional life are classified under the headings of feelings of pleasantness and unpleasantness, surprise, astonishment, curiosity, fear, anger, elementary æsthetic feelings, inclination and sympathy and senses. Photographic reproductions of these manifestations add to the value of the monograph.

Dr. Carrigan's study (15) is a work of value to all interested in child welfare. The author, who has had practical experience as a lawyer, has brought together in compact and convenient form information which has hitherto been accessible only at the cost of much labor, and has compiled a summary of American Laws relating to child-welfare, which begins with the unborn child and follows out its legal status until it reaches majority.

Fischer's (28) study of laziness is, as the title indicates, analytical in its nature, and the author excludes all cases superficially classified by parents and teachers as laziness but which are really due to causes quite apart from the will, such as physical depression in consequence of anæmia, inhibitions caused by rapid growth, acute illnesses, malnutrition, overlooked sense defects, native poor memory, etc. Nor does he include under laziness cases of weakness of voluntary attention, but restricts it to choice, definite cases in which there is a yielding to the inclination to avoid what is unpleasant, associated with an inner recognition of a duty to be performed. Laziness is thus an habitual weakness of the voluntary attention, combined with an indolent self-indulgent aversion of the unpleasantly toned sensations of a strained attitude and fatigue. The author further distinguishes the form of laziness, the resistance form and the indolence form. The latter is the laziness of the dreamer; the former is often brought about in children by undeserved censure after they have



really made an effort to do their best, and is therefore of pedagogical importance.

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## ADOLESCENCE

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It is the aim of this *Sammelbericht* to outline the main contributions and tendencies for the past two years within the field of the psychology and pedagogy of adolescence. For purposes of orientation and analysis these contributions may be centered around (1) Physical Growth; (2) Sex Maturation and Instruction; (3) Juvenile Delinquency; (4) The Normal Boy and Girl; (5) Experimental Studies; (6) Educational Tendencies.

*Physical Growth.*—Weissenberg's study (118), a most significant publication, contains chapters on foetal growth, the proportions of the bodies of babies, absolute and relative increase during the periods of childhood and adolescence, with the conditions and laws influencing growth. Excellent tables and charts are included which give the growth of different parts of the body together with the relative height and height increments of Jews, Russians, Americans, Englishmen and Belgians. The data are scientifically treated and of particular value are the distribution charts for each of the thirteen bodily measurements studied. Baldwin's (9) series of investigations based on consecutive records of physical growth show that the taller, heavier boys and girls with good lung capacity begin and end their pubescent acceleration earlier than those below median height; they are physiologically more mature and maintain, on the average, higher school grades and better school marks. It is recommended that the grading of a school system should be based on the physiological and mental ages of the child rather than on the chronological age, as is customary. The mental tests, as is well known, are based on a two-dimensional scale, that of chronological age and mental age, but they do not take into account the third dimension or physiological age, which, according to his results, is closely correlated with the mental age as evidenced by school standing. It will be necessary in order to formulate a complete and comprehensive system of mental tests to be used as a measuring scale of intelligence, to go further than the Binet tests and include criteria of the physiological age of the child. Harding (57) finds in comparing the percentage in school standing of 114 boys averaging 141.9 cm. in height and 34.6 kg. in weight with 105 boys averaging 145.8 cm. in height and 36.8 kg. in weight, that the latter group maintains a higher school standing.

Substantiating this view from the standpoint of the nervous child, Barker (12) has re-emphasized the fact that "If we wish our children to be strong, energetic and courageous, if we desire to insure them against the nervous ills which follow in the wake of debility, inertia and timidity, we must see to it that all the muscles of their bodies are systematically and regularly exercised. In the schools they should never be pushed ahead too fast; competition is dangerous for the nervous child."

Sandiford (98) gives practical applications of the theory of measurement illustrated by a study of the heights and weights of 50 Manchester grammar school boys ranging in height from 53 inches to 68.75 inches, together with methods of computing correlations. Feldman

(38) offers a summary of the Jewish child's development and calls attention to the fact that between the ages of 6 and 11 the growth among the Jews is less than among non-Jews, and that Jewish children are shorter and lighter than other races. Tallant's records (110) of 401 delinquent girls at Sleighton Farm show that 57 per cent. are below Bowditch's norms in height and 50 per cent. in weight. Goddard's (46) study is the most thorough presentation of the physical growth in the field of feeble-mindedness. It gives in classified form the height and weight of morons, imbeciles and idiots ranging from birth to 31 years of age, together with composite growth curves for boys and girls. No mention is made of repeated measurements, but the conclusions maintain that there is a remarkable correlation between physical and mental growth. The growth processes are most retarded or "upset" with the idiot; the imbecile follows and later the moron. Defectives are heavier at birth than normal children and sex differences are less marked as the scale is descended in grades of defect.

*Sex Maturation and Instruction.*—Baldwin (9) recently found that the curves in height, weight and lung capacity offer tangible objective criteria for teachers and parents in determining the advent of first menstruation as a factor in pubescent development. If a girl is tall, healthy and well nourished, this physiological stage may be reached as early as eleven and one half years; if tall, but under weight, it may be slightly delayed; if very short and markedly light, it may be retarded until sixteen or seventeen years of age. The wide educational applications of these conclusions on physical training, school work and social activities emphasize the fact that the smaller adolescent girl should be treated as a younger person who has not had the physiological disturbances and the accompanying mental awakenings and experiences that her chronological age in years would seem to indicate. Weissenberg (118) also found that the girls who have had their first menstruation before thirteen years of age are taller, as a rule, than those who have not reached this stage before fifteen years of age.

Willson's (123) *The Education of the Young in Sex Hygiene* is the first extensive text-book on this subject. The book is sane, scientific, practical, and educational in its point of view and treatment, approaching the problem from the standpoint of plant, insect and animal development. Sex hygiene means sex health obtained and incurred through the prevention of ignorance regarding the normal sex functions. Sex hygiene, the economic relations and social diseases, the

boy's need and the girl's need are discussed in the first four chapters; the succeeding five chapters deal with heredity and what must be taught both the boy and girl; this leads to the topic of the training of the teacher. After devoting three chapters to talks to boys and girls, the methods of transmission and eradication of social diseases are discussed. The author believes that after "a few years a very different type of text must be prepared which will enter into greater detail and amplitude with regard to sex relations than seems wise, even if justifiable, at this time." Unfortunately he has tried to combine information for both children and adults in married life and consequently some of the advice is of such a nature that it is beyond the child's experience and the book should remain in the hands of the teacher as a guide. In Weyse's translation of Thoinot's *Attentats aux Mœurs et Perversions au Sens Genital*, appear many references to the perversions of adolescent sexual instincts for physicians or those interested in the clinical, psychological, medical, and legal phases of their profession. The work is of a practical pedagogical value for specialists, since all discussions are based on actual cited cases. Hug-Hellmuth's (67) volume, which treats the subject from the Freudian point of view, has been properly evaluated by Dr. Smith in the preceding summary. Mention may also be made of Brill's *Psychoanalysis* (20) which sets forth the Freudian theories and practical applications of psychoanalysis. The chapters on The Œdipus Complex, and The Only or Favorite Child in Adult Life are perhaps the most significant in this connection. Van Teslaar (116) and Chabot (24) have published some very excellent summaries of recent literature on psychoanalysis with particular reference to the theories of Freud. Wile's (122) little book is suggestive for parents and teachers. So also are those by Kohl (74), Buck (21), Ellis (36) and Scharlieb and Sibley (99). Jane Addams's (1) *A New Conscience and an Ancient Evil* is the most humanely written and the most authoritative exploitation of the subject which the title of her book connotes.

In summarizing the work on sex instruction, Foster (43) attempts a selection and concatenation of the facts given by workers in medicine, hygiene, education, psychology, ethics, and allied subjects on this problem and maintains that "instruction is essential to eliminate the unnecessary worry and self-reproach of the uninstructed adolescent, to overcome the deceit and hypocrisy which he is forced to maintain toward his parents and others who insist on silence on sex matters." Bigelow (15) believes that if the girls of tomorrow can be physically strengthened and mentally and morally prepared for



motherhood by knowledge of the laws of hygiene and the laws of sex, we shall have the right to be proud and feel that our educational system is sound and good. Parkinson (91) finds biology the direct method of approaching sex instruction and this view is also held by Bigelow (14). In working toward a solution of the control of the reproduction of feeble-minded children, Goddard (47) concludes that it is not a question of segregation *or* sterilization, but segregation *and* sterilization. Among the other helpful contributors to this field are Cabot (24), Bleuler (16), Eddy (33), Eliot (35), Mönkenmöller (85), and Wild-Cassel (121). It is now recognized that sex-education is only one of several possible lines of attack on the tremendous sex problems of our day, but the outlook toward improved sexual morals and health is hopeful.

*Juvenile Delinquency and Crime.*—Since Dr. Weidensall has given us a *Sammelbericht* of criminology and delinquency in the June number of the BULLETIN, it will only be necessary to include in this section of the present summary a few additional significant studies and to supplement briefly the cited reference to G. G. Fernald (39) from the viewpoint of adolescent psychology. In testing 100 newly committed delinquent adolescent boys to the reformatory in order to differentiate the responsible and irresponsible, Fernald used twelve series of mental tests and found that weight discrimination, ethical discrimination, extent of movement, recognition, calculation, cancellation and achievement capacity, or the time a subject can stand on his toes, were of most significance in diagnosing cases of mental deficiency, subnormality, and normality. He found 25 per cent. deficient and 25 per cent. subnormal but subject to good disciplinary training. This valuable paper, like Healy and G. Fernald's monograph, is full of psychological data but attempts the difficult double problem of standardizing tests and at the same time depending on them for diagnostic indices and remedial treatment. In Paul's translation of Engel's book (37) are a number of data on the course of disease, degeneracy, illiteracy and criminality, and their protection among proletarian children. It is estimated that the annual number of illegitimates in Europe exceeds 600,000 and while the mothers in most cases belong to the proletarian, only 45 per cent. of the fathers may be classified thus. The chapter which is most suggestive from the standpoint of adolescent psychology deals with criminality in youth which is due to inherited predisposition, bad educational influence and poverty. For remedial purposes, a juvenile offender who is discharged under the present prison system is less likely to commit another offense than if sent to prison.

The Juvenile Psychopathic Institute in Chicago has been making catamnestic studies on the various types of temporary adolescent psychoses, but has published little during the past two years. In his work with 1,000 repeated offenders among juvenile delinquents, Healy finds that 7.5 per cent. are epileptics who often have premature and excessive sexual development. He agrees with the current trend of belief that "the disease itself produces very frequently a characteristic, definite mental and moral deterioration shown most markedly in the field of social inhibitory powers. Hence, the gross appetites, the cruel behavior and the vicious crimes." The other cause is found to be inherent in environmental conditions.

One of the most fertile fields in the psychology of adolescence is in connection with the study of Juvenile Courts. This work is now carried on at Chicago, Seattle, Newark, Cincinnati, Philadelphia, and a number of other places. There seems to be no settled agreement as to the predominance of the type of mental disturbances or weaknesses among these children. Healy (59) emphasizes the prominence of epilepsy, and Goddard (48) the large percentage of feeble-minded children. Goddard maintains that probably 80 per cent. of the children in the Juvenile Courts in Manhattan and Bronx are feeble-minded, while in Newark 60 per cent. of the children in the Juvenile Courts were found to be feeble-minded. Baldwin (10) concludes that the moral defects of many delinquents may be explained on other grounds than feeble-mindedness.

In answer to the question, "How Strict Are You with Your Daughter?" magistrate Freschi, in a popular article, finds that many of the girls in court are denied parents' sanction to harmless amusement and this leads to intrigue, deception and finally to downfall, for secrecy is the principal source of evil and romance is part of a natural girl's life. That unhappy and conflicting home environment is largely responsible for juvenile delinquency and crime, is shown by Dorr in a popular study of the "Wayward Girl," Hall (56), Henderson (62), and Godin (49). In answer to the question, "What is Wrong with Our Boys?" Miller (84) finds that most complaint comes from those who employ them. He further makes an analysis of individual differences in boys and concludes that the greatest deficiency of our boys is the lack of ability to think, to work and to prepare work carefully. In analyzing hoodlumism, Riis, writing for parents, finds the lack of rational recreation its strongest ally. The early elimination from school and "our children becoming senseless automatons in the industrial grind calls for more men rather than more millionaires. The school houses must have work shops."

The question of juvenile labor is a pressing one. In the southern part of the United States there is a general feeling that the evils are being overemphasized and that it is better for children to be at work under proper conditions than idle on the streets or in the country. In the northern part of this country there is harsh and often unintelligent criticism of this view, while, in England, Greenwood (53) maintains that "The work of the early years of the twentieth century is to push the age to which control and protection extend to the upper limits of adolescence. The cry of the adolescent is as insistent to-day as 'the cry of the children' was three generations ago. It is a cry against what is to them useless toil, which robs them of full opportunities for expressing the new strange, inchoate desires, impulses, and emotions betokening the passing of childhood and the coming of a new epoch. The problems of juvenile labor, therefore, are educational rather than industrial."

*The Child in the City* (19) gives the papers presented at the Conferences held during the Chicago Child Welfare Exhibit and contains papers of significance in the study of adolescence of deficient children by Lathrop, MacMillan, Judge Pinckney, and Jane Addams. A most practical study of the field of adolescent development is being carried on in Boston under the auspices of the National Federation of Settlements. These investigations concern the problem of adolescent girls between the ages of fourteen and eighteen and began during the winter of 1911-12. Over two thousand workers among girls contributed their experiences. The work, which has been extended to every one of the four hundred settlements in the United States, is now being carried on with Robt. A. Woods as secretary. The investigations include the general conditions and environment of working girls, the home, industry, recreation, morals, club and class work, and future development. Among the best studies in adolescent labor should be mentioned *Juvenile Labor Bureaus and Vocational Guidance in Great Britain* (112); Clopper's *Child Labor in City Streets*; and the books by Dodge (31), Greenwood (53), Ogburn (90), and Goldmark (50). Among the other significant contributions to this question are Eastman and Rosanoff's *Association in Feeble-minded and Delinquent Children* and Moore's (87) *Mentally Defective Delinquents*. In regard to the distribution of defective delinquents, Hart, in a recent number of the *Survey*, has given us a valuable discussion which treats of the number of defective children in reformatory schools, the significance of sterilization of defective delinquents, and a working program. He finds that the number of feeble-minded children ranges

from 20 per cent. in the Illinois State School for Boys at St. Charles, to 60 per cent. in the Industrial School at Baltimore. On this basis he estimates there are 26,000 defective delinquents in prison and 6,000 in juvenile reformatories. At present, laws providing for their sterilization have been passed by Indiana, 1907; Connecticut, California and Washington, 1909; Nevada, New Jersey and Iowa, 1911; and New York, 1912.

In her introduction to the *Delinquent Child and the Home*, published by the Russell Sage Foundation and written by Breckenridge and Babbitt, Miss Lathrop says: "For the first time in history a court of law, the so-called juvenile court, reveals a great social situation and thereby bestows the greatest aid toward social justice which this generation comprehends—the truth made public." These authors have not only performed a service in bringing to the lay reader a vast amount of information collected by the Chicago Juvenile Court, but the individual histories and statistical material bearing on 14,183 offending boys and girls for the past ten years abound in psychological data on delinquency, vagrancy, criminality, immorality, incorrigibility, larceny, and their relationship to or dependence upon home conditions, poverty, orphanage, degeneracy, ignorance, vice and lack of recreation. From the study of philanthropy and penology, Stewart (105) gives valuable constructive, remedial suggestions in regard to the delinquent child. Lull (78) emphasizes the value of moral instruction through social intelligence, and Paul-Boncour (92) that of medical pedagogy.

*The Adolescent Boy and Girl*.—Puffer (95) has written the best organized and most practical book that has appeared on the gang interests and instincts of boys between twelve and sixteen years of age. Exceptionally good are the chapters on the Organization of the Gang and The Gang in Constructive Social Work. In a very popular book Eldred (34) gives in a dramatic and interesting way the life histories of two competing boys' clubs, together with some suggestive insights into adolescent boys' interests and traits as well as particular comment on how to organize boys' clubs. In a sane, practical treatise with less of the sentimental than usual in such booklets, McCormick (80) finds the boys' club a practical evangelistic agency. Hoben (63) makes a humanitarian plea to help educate the church out of a negative or indifferent attitude toward the absorbing play interests of childhood and youth and shows how this may be done through the club. Bourne's book (18) contains chapters on the meaning of youth, the virtues of seasons of life from quasi-religious



and philosophical points of view. Alexander (4) gives a wide grasp of adolescent development, since each of the sixteen chapters is written by an authority in the field or a person of particular aptitude and appreciation toward boy life. McKeever's (83) *Training the Boy* is a quasi-practical book with timely suggestions from the point of view of inner religious revelations, containing helpful bibliographies and appropriate illustrations. *Twelve Years with My Boy* (5), published anonymously, is particularly helpful for those dealing with adolescent boys in church. With some psychological insight but little definite experimental data, Kirtley (73) discusses the problems of adolescent boyhood from a practical standpoint. Foerster (41) gives us a practical book as a guide to adults in assisting the adolescent youth to form a good strong character. Werner (119), in a popular book on bringing up the boy, attempts in a hortatory manner to give the boy's viewpoint from his own reminiscences, naively stating that the passing years have not dimmed his full understanding of the boy's tendencies, impulses, impressions, and point of view. Whitehouse (120), a member of Parliament and Honorary Secretary to the National League of Workers with Boys, makes from his experience with secondary school boys a very readable book on problems of boy life. To be commended, too, are Hall (56), Peper (93), and Wayne (117).

The City Club of Chicago under the direction of Professor Mead (27) has made its report on vocational training which centers around the idea, "retardation makes for elimination and elimination spells defective education." The last part (IV.) includes the results of educational tests given by Ristine to boys who left school for work. In his *Introduction to the Study of Adolescence*, Andrews (6) emphasizes the pathological symptoms of adolescent development, including chapters on the science of education; adult influence on education; immorality and sexual perversion in schools; their cures; self assertion from the disciplinary, psychological and physiological aspects with some future ideals. The great prevalence of homosexual immorality in English boys' schools is emphasized and found to be due to ignorance, inherited pathological tendencies, latent forms of mental derangement, environment, unhygienic conditions and the personal influence of other boys. As a rule the perversions are among the most gifted adolescents who possess potentiality both for genius and for perversions in excess of their fellows, but who later fall back to mediocrity of achievement. Since perpetual control, dogmatic religion and athletic training will not take the place of self-reliance,

sex instruction and social obligations, the remedy lies in *co-education*. Albee's (3) *Confessions* includes morbid experiences of adolescence, play activities and apprentice experiences. Among the important autobiographies which recently have been published and which throw much light on the ideals, motives, interests and common experiences of adolescents are those of Muir, Hay, Gideon Wells, Roosevelt, Yoshio Markino, and Henry James. The indomitable courage, self suppression, limitless sympathy, heroic silence and nobility of a great adolescent boy, Lincoln, is told in story form in Aitken's (2) account of our American martyr. Among the more significant magazine articles on the boy problem should be mentioned those of Bourne (17) and Miller (84).

In a psychological interpretation of the club as a social institution from a genetic standpoint, Hartson (58) studies the functional aspects of the gang life of children, basing his conclusions on the experimental inquiries of McGhee, Bonser, Puffer, Browne, and Culin, and later the work of Sheldon and others. He finds that the age-curve for the formation of clubs covers the span from the 7th to the 18th years, with the curve of frequency for both sexes rising highest from 10 to 14 years, and that each club consists on the average of eight members.

The Camp Fire Girls of America, which is the natural auxiliary to the Boy Scout movement, originated with Dr. and Mrs. Guick, who have conducted a Girl's Camp for the past twenty years during the summer months. The movement spread rapidly and twelve hundred Camp Fires were established without use of propaganda of any sort. The purpose of the organization is to show "that the common things of daily life are the chief things of beauty, romance and adventure; to aid in the forming of habits making for health, vigor, and out-of-door habits and the out-of-door spirit." The Misses Beard organized "The Girl Pioneers of America," a somewhat similar organization, basing its appeal on the hard virtues of our pioneer women rather than on the more fantastic and picturesque Indian motif.

Practically no significant books on the psychological and educational aspects of the development of girls have been written during the past two years unless that of Moor (86) be considered of this type. In a history of the Young Women's Christian Association, which now numbers over a half million members, she summarizes the work of many great women and presents some tangible ideals for adolescent girls among their own sex. Russell's book (97) contains some data on adolescent play with particular reference to Boy

Scouts and girls' clubs. Fish (40) discusses in a practical way the physical, instinctive and emotional life of a child and gives some suggestions on co-education, religious development and the relation of parents to their children. Elizabeth McCracken (81) emphasizes the appreciation side of the child life and deals primarily with the preadolescent period. Hodges (64) shows that children grow in religion not by emphasis on habits of introspection, and not by being hedged about with protection or limitation, but by being brought into definite religious activity because they need aggressive goodness. Mention should be made in this connection of G. Scholz's *Moderne Jugendprobleme und Evangelische Kirche*, which is based on practical work in a mission in Berlin and shows a critical appreciation of the problem of adolescence and the church, and of the studies of Forbush (42), Dugas (32), Johnson (68), Chabot (25), Schroeder (100), and Störning (106).

*Experimental Studies.*—Burt and Moore (23) have made experiments which aim to show the differences between the mental abilities and capacities of the two sexes from 12.5 to 13.5 years of age. The tests were made to measure the mental functions of controlled movement, perception, association and reasoning. The girls were found to be acute to space discriminations measured by the æsthesiometer, more sensitive to pain, more sensitive to recognize the presence of odors but less able to discriminate the qualities, more acute to recognize differences in pitch, and less accurate in judging distance. In the simple motor tests boys were quicker at tapping and in reacting to light and sound. In reading, writing and counting, measured for speed, the girls were more successful; in mechanical puzzles, measured for accuracy, precision and ingenuity, the boys were shown to be the better; in the free association tests, the boys were observed to be the better, but in the restricted association tests there was very little difference between the sexes; sex differences in reasoning were, however, very slight. On the whole, the higher the process that was tested, the less observable the difference. The conclusions drawn by these authors include the following statements: "Innate sex differences are very slight and they are quantitative rather than qualitative; the mental life of males seems to be predominated by the control of the movements, while that of the females is predominated by the natural expression of the emotions; the mental differences that do exist seem to be caused by anatomical and physiological peculiarities of sex rather than to different nervous organisms. The sex differences seem no greater than the individual differences within the sexes.

Lode's (77) investigation of *Die Unterrichtsfächer im Urteil der Schulkinder* is based on a study of 198 boys and 77 girls between 13 and 14 years of age. In a comprehensive report of a series of tests administered to 800 fourteen-year-old children, Wooley and Fischer make the following generalizations on children leaving school to go to work: The girls are superior to the boys in height, weight and perfection of coördination, while the boys are superior to the girls in strength, rapidity of motion and vital capacity; the girls are somewhat superior to the boys in all mental tests; the tests of physical development show a slight correlation with grade, and the tests of mental ability a more marked correlation.

Burness (22) makes a comparative study of boys and girls in secondary education and concludes that boys and girls should be taught together in the majority of subjects by men and women, since sex differences are not as marked as individual differences within the sex. In a comparative study of white and colored children including principally adolescents, in the schools of Columbia, S. C., Morse (89) tested with the Binet test 119 white children and 120 colored. 25.2 per cent. of the white tested below age, 42.9 per cent. at age, 28.6 per cent. above age; and 60.8 per cent. of the colored below, 30 per cent. at age, and 9.2 per cent. above. The "near-white" showed the widest variation. Counting as satisfactory those who tested their age and one year either above or below, the results are 83 per cent. for the whites and 68 per cent. for the colored. Chancellor (26) finds the negro precocious in childhood but having a short-circuited adolescence "with a pragmatic maturity." In a substitution test in learning, Baldwin (10) finds the negro girls much slower to warm up to the occasion, and the first to drop back and lose interest. The negroes accomplish 65 per cent. as much work as the white girls and make 245.3 per cent. as many errors. The learning capacity of these delinquent negro girls differs quantitatively and qualitatively from that of the white girls, and the educational corollary follows that different methods of instruction and training may be required for the negro girls than for white girls during the adolescent period.

Beck (13) found that inferiority in orientation among mutes was present only under "artificially arranged conditions." Little if any inferiority in the sense of direction was present while diving in water blindfolded. Sylvester (109) finds in an experimental study of 85 adolescent blind children with the form board: "(1) Those who have had visual experience retain their visual imagery and are assisted by it in the interpretation of their tactile impressions; and (2) tactual



imagery, even in those who have no other recourse, is not as effective as a combination of tactual and visual imagery." Heck's (60) studies on fourth, fifth and sixth grade school boys and girls show that mental fatigue in relation to the daily school program is far less than is generally believed. The small amount of fatigue noticeable during the school day was more probably caused by improper conditions of ventilation, lighting, etc., than by the school; physical defects, however slight, in the children are undoubtedly the great causes of fatigue in most schools. Although children are apparently fatigued after a school day, no consistent depreciation in quickness and accuracy of perception, decrease in sensitivity, mental abilities or in muscular capacities could be demonstrated by the selection tests applied by Martin (79) to a limited number of 13 and 14 year old pupils.

The subject of mental tests does not fall within the scope of this paper. It should be said, however, that while the 15 tests outlined by Simpson (102) have not been standardized on the basis of the study of adolescence, they are just the kind of material which should be given to adolescent boys and girls, since they aim to determine the significance of certain types of tests by showing their relationship to one another and to general intelligence. Geissler<sup>1</sup> has recently offered a general intelligence test providing for a continuous and graded measure of acquired knowledge and native rationality for pupils between the ages of 9 and 19. Wyatt (126) in a study on the higher processes in order to ascertain to what extent different tests correlate with a subjective estimate of intelligence and to select those tests which give the highest coefficients of correlation, found that the analogies and completion tests give the highest correlation with the subjective estimations of intelligence; that the theory of a general common factor is supported by the fact that correlational coefficients admit of hierarchial arrangement; that the retention of nonsense syllables is a prominent factor in the mental process of the higher levels; and that some tests which are relatively similar in content give low coefficients of correlations with each other. Giroud (45), experimenting in the laboratory of the Sorbonne, demonstrated that certain types of suggestibility decrease with age. Sleight (103) finds in his study of pre-adolescents, in the years from 11 to 12, in three schools, that practice does not necessarily develop any general power in memory training, but general improvement may be inferred when common elements assist the practice in substance effecting an im-

<sup>1</sup> Cf. this BULLETIN, 1913, 10, 170.

provement in that subject but in no other. Courtis (30) gives the results and conclusions of "a study of the reliability of single measurements in the derivation of standard scores in adding." The original tests were made on 270 eighth-grade children in the eight larger grammar schools of San Jose, Cal. The Courtis tests have a very distinct educational value. Winch (124) in a study of school children ranging from 8 years and 11 months to 13 years of age, finds that the children of the social class A, who live in more spacious and expensive houses, do better than those in class B, who live in crowded conditions and cheaper houses. This difference seems to be dependent more on inferiority or natural ability than on educational environment. In her work with 17 young "superior" adolescents, Ulrich (111) finds the foremost qualities to be self-control, self-helpfulness and concentration of attention.

The most important publication on the provision for exceptional children in public schools has been compiled by Van Sickle, Witmer and Ayres (115), and the most complete study on retardation and elimination by Strayer (107). In a book called *The Special Class for Backward Children*, Witmer (125) and his assistants outline the motives and aims of clinical work, the purpose and organization of special classes.

So much experimental work has been appearing on the feeble-minded child that if experimental educational psychology is to be of assistance to education, the differences between the mental traits and capacities of normal children and feeble-minded children of the same mental ages must be distinguished and differentiated. The assumption has been made that the feeble-minded children of a mental age of children of seven have the same mental traits as a normal child of this mental age, but this assumption is untenable. Witmer is making some very important contributions to this problem indirectly by experimenting with border line cases and differentiating carefully between *mentally deficient* children and children with *mental defects*. Heller (61) deals in the last part of his book with juvenile hysteria. The well-known fact that hysteria may appear in an epidemic form is due to the susceptibility of children to suggestion. The author attaches first importance to manual training in the treatment of the psychopathic child. In this way coördination of movement is achieved and the training of the motor-areas reacts on the psychical development of the child and the will-power is gradually educated. Holmes (65) gives a detailed study and classifications of various cases (mostly young adolescents) dealt with in the psycho-

logical clinic at the University of Pennsylvania. There is a good chapter on the classification of moral deviates and the author sets forth in convincing form a plea and argument for a consideration of the sociological relations of the clinic. Supplementary to the data and methods for the psychological clinicists are discussions on the educational and sociological aspects of child life, together with many notes on adolescent psychoses. Another book on feeble-mindedness is that of Lapage (75). Gross's book (54) should also be mentioned. Grozmann (55) reveals in places brilliant insight into the mental development of adolescent children. The books by Richard (96) and Van Biervliet (113) have an important indirect bearing on adolescent experimental psychology.

The most important contribution to the study of the elimination of high school students has been made by Van Denburg (114) which goes into the details and causes of elimination based on the information given by about 1,100 pupils who entered various high schools in 1906. Limitations of this method of securing data are duly recognized and the conclusion is that early elimination from high school is favored by late entering age; by having younger brothers or sisters; by childhood free from illness; by foreign parentage; by the choice of business or occupation for boys and stenography for girls; by disbelief in the values of a high school course; by uncertainty as to probable length of stay and a determination to leave early. Gossett's (51) study on retardation is of particular value because it aims to give the life histories of 314 children and emphasizes the need of applying standardized tests of intelligence and of performance in school subjects to retarded children.

*Education.*—Swift (108) shows the rôle and educational applications which racial instincts play in the emotions, intellect and will of children. The spirit of adventure, the ways of youth, the chance to grow, the school and the community, the vagaries of the school, fallacies of moral training, the spirit of the gang and the release of mental forces are treated successively. Many individual life histories from newspaper clippings and personal observations are included. Cornell's (29) book is the best so far published showing the effects of malnutrition, sense defects, defective teeth, enlarged tonsils, adenoids, diseases, bad posture, and mental defects on adolescent boys and girls and the methods of removing these defects. There is a great deal in this book bearing directly on the normal and abnormal mental and physical traits of adolescence. *The Conservation of School Children* contains the papers of a conference held at Lehigh University

before the American Academy of Medicine (28), centering around the problems of the feeble-minded, hygiene, and sexual instruction.

Johnston (69) gives a most comprehensive treatise on the functional and methodological aspects of the high school program of studies. In the introductory chapters the editor develops the psychological phases of the general high school problem of instruction, and a number of the other 24 writers have been fairly successful in adapting their methods and material instruction to the successive stages and nodes of adolescent development. This is particularly true of the chapters on the principles or plans for reorganizing secondary education, and on the teaching of English, physiology, hygiene and psychology. The chapter on sex hygiene is particularly comprehensive, sane, frank and suggestive. While there is lack of continuity from chapter to chapter, each one in itself is worthy of careful reading by high school teachers. King (72) carefully analyzes some of the phases of the social interests and activities of pupils during the high school age, and calls attention to various ways in which the social life of the school may be correlated with the social development and awakenings of the adolescent.

Judd (70) discusses the meaning of secondary education, and in reviewing the change from an eight year elementary school to the new seven year course as carried on in the University of Chicago Elementary Schools, he states (71) that "A general social consciousness and a desire for the simpler forms of social life which are known in the high school and are cultivated by adolescent children, begin to appear in students of the eighth grade." Gray's (52) study of variations in grades is based on experimental data which not only show present conditions in regard to the unreliability of methods of grading, but also present a relatively simple method by means of which any high-school principal can study the condition of the grading in his own school and take due steps to remedy the faults that he may find. In a most commendable attempt to show the intimate and necessary relationship between school organization and the individual child, Holmes (66) gives the various systems of promotions in vogue, calls attention to class versus individual instruction with normal, sub-normal, gifted pupils and pupils with mental defects, and includes the de Sanctis and Binet and Simon Tests with some directions as to their application. A good bibliography is appended. The book is eclectic and not particularly psychological in treatment but suggestive for school superintendents.

Experimental schools affiliated with university and college depart-



ments of education in this country, Germany, France, Italy and England have so far given us few scientific experimental studies in adolescent education or psychology. A few general problems are being attacked, such as the dropping of the seventh grade at Chicago, and the fourfold type of education at Gary. A very significant experiment in adolescent education on a large scale is in process at the new Washington Irving School in New York where the girl, and what she wishes to become, and not the subject or method of instruction, is the center of correlation. MacAndrews personally states: "All of the high schools I have known have been innocent of both social purposes and individualistic aim. The daily occupation of the high school is to do that which all the authorities insist education is not." Bagley (8), in answer to his question, "Do the High Schools Need Reconstruction for Social Ends?" maintains that the study of juvenile delinquents shows that one of the most potent factors in the increase in crime is the gradual weakening of home discipline. Shallies (101), after making a study of the distribution of graduates of 735 high schools in New York, finds that the group of students who go to college is larger than any other group and that the students that belong to this group are distinctly above the average. The normal school group is made up more liberally from the lower grades. The professional group is small. The remaining group is left without comment. Snedden (104) calls attention to the fact that certain forms of vocational power and flexibility are acquired with difficulty, if at all, under an apprenticeship system resting largely upon a psychological foundation of imitation and suggestion. Careful experimental studies of the processes by which skill—flexibility and capability of growth—may be developed, must be made. But no less important is the knowledge, auxiliary forms of skill, and ideals which function in the larger or flexible and more prolonged vocational efficiency. Baldwin (11) definitely states: The trained teacher for the first adolescent period from twelve to sixteen should by all means be a man. This is the period for seeing visions and making plans, for formulating ideals characterized by a fleeting, changing and shifting of interests closely correlated with contemporary experience. Since these ideals are immediate, temporary and flexible, the teacher and parent must meet the conflicting attitudes with patience, sympathy and a multitude of resources in regard to boy life. The methods must be based on the boys' interests and feelings—those things which adult men may have lost and which never were common to women. After proving the superiority of boys over girls in mathematics and

in certain other sciences, Burness (22) holds that "when we have learned that every individual whether boy or girl needs special treatment it will not seem an impossible matter to differentiate between the sexes without losing the grand advantage of assisting them together in one corporate body." Poirson's (94) *La Coéducation* has not been accessible to the reviewer.

In the *Journal of Educational Psychology* have been appearing for the past two years a series of valuable articles on How to Adjust the Teaching of Various High School Subjects to the Successive Stages and Nodes of Adolescent Development. The scattered psychological data included in these various articles by Thorndike, O'Shea, Pierson, Rochelle, Snedden, Freeman, Metzler, and many others are worthy of careful analysis. Of similar value is Lay's study (76). During the past two years a council of the R. E. A. has held two important conferences at New York and Cleveland on the subject of "Morals in the High School." So also have been organized special commissions on the relation of the Sunday School to adolescent boys and girls in educational institutions as reported at Culver, Indiana, May 17-30, 1913. Moore (88) has also recently issued a high school text on the English plan. In a report of the National Council of Education on Standards and Tests, moral delinquency, it is asserted, demands special treatment. "We should more frequently judge the efficiency of schools which attempt to reform the morally delinquent in terms of the later activities of the individuals placed in these special schools."

*The present needs are:* (1) Definite, detailed, consecutive studies and experiments on the physiological phases of growth and on the permanent, intermittent, and transitory mental traits and instinctive tendencies of adolescents from ten to twenty years of age. (2) Comparative and individual studies for this age on the various aspects of sensation, and the analysis of ideation, memory, association, habit formation, perception, judgment, conception, reasoning, emotion, and the interrelation of imitation and suggestion with the view of future studies in correlation; and the formation of mental tests for this period where they are least satisfactory, because the detailed preliminary work has not been done. (3) Group and individual studies in the social awakenings and interests in their relation to the dawning of the new conceptions of the new self which marks the adolescent period. (4) Experimental and laboratory high schools where courses of study, methods of teaching, systems of promotion and self-governing plans of discipline may be carried out under

standardized and controlled conditions. (5) More refined methods and tests for diagnosing the causes and controlling factors in juvenile delinquency and series tests for aid in evaluating the moral status of the nodes of development during childhood.

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## SPECIAL REVIEWS

*The Original Nature of Man. (Educational Psychology, Vol. I.)*  
E. L. THORNDIKE. Teachers College, Columbia University, 1913.

The present volume is the first of a series of three planned by the author, of which the third volume, *Individual Differences and their Causes* appeared first in 1903 under the general title, *Educational Psychology*. The second volume, *The Psychology of Learning*, is to appear later.

This work on instincts represents without doubt the best and most accurate scientific thought to date about a problem or group of problems on which there has been more loose discussion in the name of science than upon any other phase of human nature.

The beginning of the volume presents a statement of the problem and method of attack which will be of permanent value to the scientific psychologist. The plan of treatment in the words of the author is as follows: (1) The description and classification of original tendencies, (2) their anatomy and physiology, (3) their source or origin, (4) the order and dates of their appearance and disappearance, and (5) their control in the service of human ideals.

The ideal of scientific method held by the author is well brought out in his distinction of three "stages in the description of human nature." The first, the stage of "mythical potencies," among which was "instinct." The second stage substituted "instincts" for "instinct," and attempted to describe behavior in terms of the connections between "particular responses or reactions to particular situations or stimuli." The third stage, as yet only imperfectly attained, has as its ideal the description of behavior in terms of such objective events as "any impartial observer can identify and . . . verify." The study of instincts thus resolves itself into a careful description of the situations, the unlearned responses to these situations and, ideally at least, the neural bond which exists in the organism between the situations and the responses. The subjective states, for example, of fear, anger, etc., are ruled out. The scientist is confined to the three elements mentioned above on the ground that these alone can be verified by impartial observers. The reviewer ventures the reflection that many thoughtful readers will wonder whether the mere fact of the difficulty thus far experienced of describing satisfactorily the subjective or psychical accompaniments



of instinctive behavior, warrants eliminating them altogether, and especially whether the hypothetical "neurone-actions" are really any more objects of scientific treatment. Certainly the psychical states are phenomena, even though they are not as conveniently described as the "behavior" and "situation" elements. The reader may raise these questions even though recognizing fully that the larger part of the problem of instincts is that of behavior.

The author very pointedly criticizes the inventories of man's original nature thus far made, on the basis of unreliable methods of gathering the data and the general difficulty attendant upon even a scientific investigation. The reader then turns from these obviously defective data to the author's own inventory and finds that what he has to offer is largely provisional, dependent upon his own "personal judgment, possibly his mere intuition." That this judgment is good, in all probability far better than any previous investigator's, may be admitted; but it strikes the reader as something like an anti-climax to the summary way in which the work of previous investigators is disposed of. The author however avoids dogmatism and is quite successful in presenting his own discussion as a definite setting of problems rather than the final word upon the topic. The book is packed with suggestive, well thought-out material which it would be impossible to summarize in a brief review. A few random references to distinctive points made here and there will have to suffice. The critical discussion of imitation is particularly keen and very much needed. He disposes very effectively of the hypothesis that there is an original impulse to duplicate particular perceived acts. Practically all cases of supposed imitation of this mechanical variety "must be explained as the results of the arousal, by the behavior of other men, of either special instinctive responses or ideas and impulses which have formed, in the course of experience, connections with that sort of behavior."

"Original satisfiers and annoyers" are explained on the basis of the readiness or unreadiness of certain neurones to act as conductors of the stimuli concerned. Such complex modes of behavior as constructiveness, curiosity and many others, commonly called instinctive, the author resolves into tendencies "to manipulate objects," "to do something rather than nothing," or to get "a more varied and novel series of impressions." "Man wants sense impressions for sensation's sake. . . . It is because they satisfy this want as well as because of their intrinsic satisfyingness, that visual exploration and manipulation are the most incessant occupations of our waking infancy."

Suggestive and valuable as is the point of view of behavior it seems to the reviewer to come most nearly to breaking down when it is applied to the psychology of the emotions, at least if one insists that what is worth saying at all must be cast in terms of behavior. If, however, it be admitted that the account in terms of behavior is only partial, there need be no quarrel. As the author says, "we do not know just what situations originally provoke smiling, laughing, crying," etc. And again, "No one knows with surety what man would laugh at, apart from training," although there have been many theories of the laughable all of which at one point or another fail to fit the facts. Is this the limit of the scientist's legitimate interest in laughter? Perhaps it is. The reviewer does not pretend to say.

In the chapter on *The Anatomy and Physiology of Original Tendencies* the reader will find much help in imaging the sort of changes in the neurones which may be supposed to furnish the substrata of instinctive modes of behavior.

One of the most brilliant, and from the point of view of certain types of popular pedagogy most needed critical discussions in the whole book, is that regarding the recapitulation theory of the order of the appearance of the instinctive tendencies. The conclusion is that it is "an attractive speculation with no more truth behind it than the fact that when a repetition of phylogeny, abbreviated and modified, is a useful way of producing an individual, he may be produced in that way."

As to waxing and waning of tendencies he finds entirely too much stress placed on the suddenness of the process. Every case which has been carefully investigated is found to mature gradually rather than suddenly. Likewise the waning is far less frequent than is ordinarily supposed and when it does occur it is certainly very gradual.

In the last chapter, the author criticizes the doctrine of Nature's infallibility in regard to instincts, the doctrine of catharsis, the use of original tendencies, illustrated specifically in the problem of school grades and in the theory of education by suggestion, and the true significance of plasticity. This latter term cannot refer to any supposed indefiniteness in man's instincts but rather to their richness by which he can learn in a degree unknown in the lower animals. The final section of this chapter and of the book states pointedly the way in which "original nature is the ultimate source of all values."

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## BOOKS RECEIVED

- HACHET-SOUPLET, P. *De l'animal à l'enfant*. Paris: Alcan, 1913. Pp. 176.
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## NOTES AND NEWS

THE present number of the BULLETIN, dealing especially with child and educational psychology, has been prepared under the editorial care of Professor C. E. Seashore.

PROFESSOR LILIEN J. MARTIN, of Stanford University, has received from the University of Bonn the honorary degree of Master of Liberal Arts and Doctor of Philosophy. The degree was conferred in recognition of original investigations in experimental psychology and æsthetics. The diploma specifies particularly the achievements of Professor Martin in the introduction and development of a method of exact measurement for the study of mental images, and in devising and formulating a method for the study of memory by the projecting of mental images.

A CORRECTION.—In the August number of the BULLETIN (Comparative Psychology Number) at line 13 of page 318, "invertebrates" should read "vertebrates."

THE following items are taken from the press:

DR. CHRISTIAN A. RUCKMICH, of Cornell University, has been appointed instructor in psychology in the University of Illinois.

A CONFERENCE on the Binet-Simon tests, arranged by Professor Lewis M. Terman, of Stanford University, was held at Buffalo on August 29 in connection with the Fourth International Congress of School Hygiene. The special purpose of the conference was to consider matters relating to needed revisions of the scale and to its proper use.

IN accordance with the decision of the council of the American Association for the Advancement of Science, Dr. Robert M. Ogden, of the University of Tennessee, has been appointed the temporary associate secretary of the American Association to further the interests of the association in the south and to promote the meeting to be held next winter at Atlanta, Georgia.

DR. TH. WAGNER, who for many years has been associated with the editorial staff of the *Zeitschrift für Psychologie*, died suddenly on July 6 of heart disease.



